

## Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Please amend the claims as follows:

1-11. (previously cancelled)

12. (currently amended) A method comprising:

acquiring an image of or pertaining to a heart;

acquiring a first data set pertaining to one or more locations of a heart vector of the heart, the first data set being spatially correlated with the image;

acquiring a second data set pertaining to one or more locations of the heart vector of the heart; and

receiving first and second data sets at a processor;

registering, via a processor, a representation of a the probe with the image by  
registering the location of the heart vector from the first data set with the location of the heart vector from the second data set, wherein the second data set is acquired using at least one lead positioned on a skin surface, wherein the location of the heart vector from the second data set can be determined relative to the lead, and wherein the location of the probe can also be determined relative to the lead.

13. (previously presented) The method of claim 12, wherein the image comprises one or more images obtained using computed tomography, magnetic resonance, or ultrasound.

14. (previously canceled)

15. (previously presented) The method of claim 12, wherein the acquiring the second data step and the registering step are performed on a repeating basis.

16. (currently amended) A method comprising:

acquiring an image of or pertaining to a heart;

acquiring a first and a second data set using a lead system;

receiving the first and second data sets at a processor;

registering, via a processor, a location of a first heart vector from a the first data set relative a the lead system at a skin surface of an imaged subject, wherein the first heart vector represents a summation of electrical currents at a particular time, the summation having a direction and an amplitude;

registering, via the processor, a location of ~~the~~ a second heart vector from the second data set relative to the lead system; and

adjusting the size or position of the image dependent on a change in the location of between the first and second heart vector generated from the first and second data sets, respectively;

17. (original) The method of claim 16, further comprising registering a representation of a probe with an image, the probe being located in or adjacent to a heart.

18. (previously canceled)

19. (original) The method of claim 16, wherein the image is correlated to a first heart vector data set and the image is adjusted by comparing the first heart vector data set to a second heart vector data set.

20. (currently amended) A system comprising:

a lead system located at a skin surface of an imaged subject and operable to acquire a first data set and a second data set pertaining to one or more locations of a first and second heart vector, respectively, of the heart;

a processor configured to be communicatively coupled to a probe[, ] and further configured to register the first and second heart vector to generate an image, the probe being configured to be located in or adjacent to a heart;

memory configured to store:

~~an~~ the image of at least a portion of the heart;

the first data set pertaining to one or more locations of the first heart vector of the heart, the first data set being spatially correlated with the image;

the second data set pertaining to one or more locations of the second heart vector of the heart;

a display configured to display the image and a representation of the probe, the image being registered with the representation of the probe by registering the first heart vector from the first data set with the second heart vector from the second data set, wherein the location of the heart vector from the second data set can be determined relative to the lead, and wherein the location of the probe can also be determined relative to the lead.

21. (original) The system of claim 20, wherein the display is configured to display a map of electrical properties of the heart in conjunction with the image and representation of the probe.
22. (original) The system of claim 20, wherein the first and second data sets are obtained using a plurality of electrocardiogram leads.
23. (previously presented) The system of claim 20, wherein the representation of the probe is registered with the image by registering the first heart vector from the first data set with the second heart vector from the second data set for at least a portion of the cardiac cycle.
24. (original) The system of claim 23, wherein the portion of the cardiac cycle comprises at least a portion of the QRS segment.
25. (original) The system of claim 20, wherein the system is an electrophysiology monitoring system.
26. (original) The system of claim 20, wherein the second data set is spatially correlated with the probe.
27. (previously canceled)